Highlights of RD Discussions May 30/31 at Radboud

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- RMS RD noise quite small over most of the array. The only real problem area is the infill, and a few ~5 isolated stations elsewhere.
- Features currently implemented to avoid triggering on noise, do not work very well
- However, now that there is a reasonable sample of data, better methods are being studied (eg. continuous pseudo RMS to mitigate noise bursts, possible shape discrimination).
- The RD dead time is currently about 10% due to 100Hz WCD T1 rate
  - It now looks feasible to implement double buffering in the RD digitizer, which would reduce the deadtime to $\approx 1\%$.

Parameters Scan – Best Configuration!?

Triggered by RD and WCD
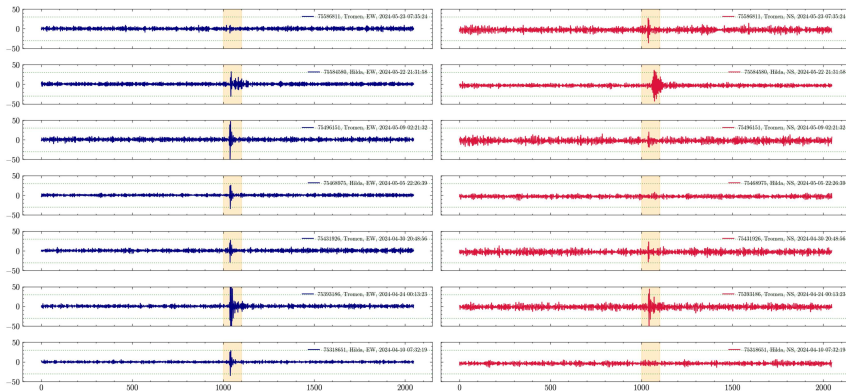
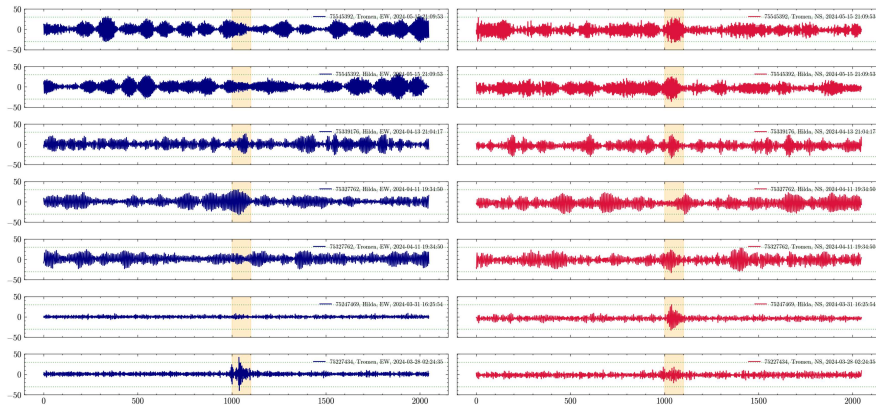## Parameters Scan – Best Configuration!?

Triggered by RD Only

id	N	N_trigger	Percentage
805	1280	83	6.484375
155	330	19	5.757576
1195	764	15	1.963351
933	970	10	1.030928
689	3645	5	0.137174
1304	17	5	29.411765
694	2368	3	0.126689
1104	29	3	10.344828
713	4152	3	0.072254
1316	541	2	0.369686
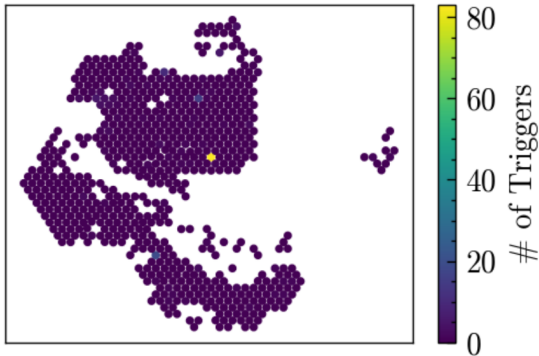
Action Items Discussed around Coffee Table

- Modify RD digitizer code to implement double buffering
- Modify UUB firmware to handle double buffering implementation in RD
- In 4 stations (2+2) in main part of array install special standalone code that writes out T2 traces to a memory stick (including RD, but not Threshold trigger), similar to what is done in Feche and TanquitoJr to get a large set of RD T2 traces
- ...
- Improve RD self-trigger algorithm based upon analysis of those traces
- Implement appropriate changes in RD digitizer